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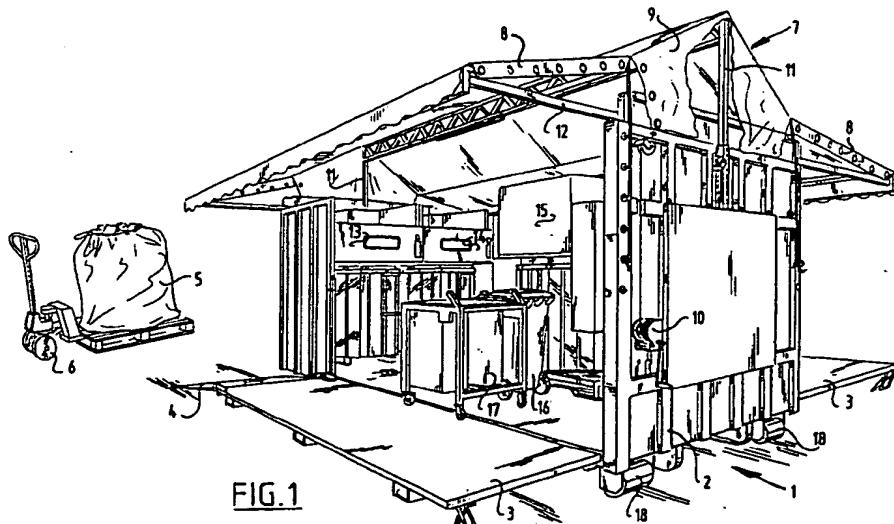
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(54) Transportable container and method for collecting and/or processing of recyclable waste.

(55) The invention relates to a transportable container and a method for collecting and/or processing waste separated according to type from events such as markets, fairs and the like. The container (2) according to the invention is open on at least one side and provided with means (3) for closing the open side and a number of storage and/or processing units (13-17) for the individual types of waste (5). The method according to the invention relates to arran-

ging the container according to the invention on or close to a market place, supplying the waste for collection, separating the waste into a number of waste types in or close to the container, storing and/or processing the individual waste types in the storage and/or processing units and transporting the container to a definitive storage and/or processing location by means of a container vehicle.



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The invention relates to a displaceable device and a method for collecting and/or processing waste separated according to type from events such as markets, fairs and the like.

During market days and town or village festivities the large quantities of refuse produced therein are often a source of problems. After the market or fair is over, overflowing containers, stacked crates and boxes, possibly reeking organic refuse and empty food containers are to be found at diverse points on the market place. The refuse from such markets and fairs is generally disposed of in ordinary containers, compacting containers and mechanical garbage trucks in order to be dumped or burned. This is however a very costly operation. The cost of disposing of the waste in this manner only increases as environmental requirements become more stringent. In addition, incineration of such quantities of mixed refuse is very environmentally-unfriendly in view of the air pollution and overfull dumping sites.

It is the object of the present invention to provide a device and method for collecting and/or processing waste separated according to type from events such as markets, fairs and the like.

The invention provides to this end a device comprising a container open on at least one side, provided with means for closing the open side and a number of storage and/or processing units for the individual types of waste. In addition the invention provides a method comprising of arranging a displaceable device according to the invention on or close to a market place, supplying the waste for collection, separating the waste into a number of waste types in or close to a container, storing and/or processing the individual waste types in storage and/or processing units and transporting the device to a definitive storage and/or processing location by means of a container vehicle.

The means for closing the open side of the device are preferably formed by a container side wall which can be folded at least partially downward. Situated in the container are the storage and/or processing units which become accessible by folding down at least one container side wall.

The waste is preferably carried by the market traders or fair stall-holders themselves to the container, where the delivered waste is separated by hand into a number of waste types. Said types of waste are for instance plastic, potato/vegetable/fruit waste, fish waste, paper and cardboard, wood and residual waste. The separate waste types are stored and/or processed in the different units in the container. It is thus possible to grind particularly the waste types paper and cardboard, wood and residual waste in a grinding device. In this way the volume of the waste decreases to a significant extent, whereby less storage space or dumping

space is needed for the final definitive storage or disposal.

5 The separated and optionally processed waste is preferably packed in moisture-tight bags. Such a packing method is particularly suitable for waste types which are placed temporarily in intermediate storage prior to definitive storage or disposal. Intermediate storage can for instance take place in order to collect a larger quantity of one type of waste, whereby disposal or processing thereof becomes more cost-effective.

10 When the waste has been collected, the container side walls will be folded up and the container can be loaded for instance on a container vehicle. The waste is then transported in the displaceable device to for instance the municipal storage site or a definitive processing or dumping site.

15 In preference the container is provided on its top with a closure of sheeting foldable out to a market stall-like awning. The market stall-like awning provides the device with an attractive appearance that fits well into the market surroundings. In an alternative case the upper part of the container is closed off by a plate of metal or other material. Preferably the plate is fixedly connected to the container and provided with canopy plates connected hinged thereto and forming part of the side wall of the container. The side wall is constructed in this case from a downward foldable portion and an upward foldable canopy portion. The advantage of such a construction is that, during storage of the device on for instance sites accessible to the public, vandals can no longer gain access to the inside of the container in relatively simple manner. In preference the storage and/or processing units are provided with a colour code corresponding to the type of waste.

20 25 30 35 40 45 By means of the device and method according to the invention 80% of the waste can be processed in environmentally-friendly manner. Potato/vegetable/fruit waste is processed for instance by composting firms. Paper and cardboard, wood, plastic and fish waste can be re-used. The residual waste is generally dumped.

The present invention will be further elucidated with reference to a number of drawings of one embodiment of the invention in which like reference numerals refer to like components, and in which:

50 figure 1 shows a partly broken away perspective view of a displaceable device according to the invention in operation;

figure 2 shows a schematic top view of a displaceable device according to the invention; and figure 3 is a perspective view of loading of the displaceable device on a container vehicle for transport.

Figure 1 shows the device 1 comprising a container 2, the side walls 3 of which are folded

downward. The downward folded side walls 3 of container 2 are joined to a ramp 4 over which waste 5 can be supplied by means of trolleys or hand trucks 6. The shown container is covered by a market stall-like awning 7 consisting of two canopies 8 and a tent part 9 located therebetween. The intermediate tent part 9 is in and outwardly slidable. By means of a pulley mechanism 10 the posts 11 of the intermediate tent part 9 can be retracted and extended. The canopies 8 can be folded outward, optionally at the same time, by means of the profiles 12. In the folded closed situation the container side walls 3 do not extend wholly to the top of container 2. When the container is folded fully closed the thereby remaining openings are closed off by the canopies. In the alternative embodiment the openings are closed off by the canopy plates.

Situated in the container are a number of storage and/or processing units. The combination shown here comprises three grinding devices 13, 14 and 15 and two sorts of waste bins 16 and 17 of different dimensions. A great variety of different combinations of storage and/or processing units is of course possible within the scope of the invention.

The container is provided on one end with transporting rollers 18 for rolling the container on and off a container vehicle (see figure 3).

Figure 2 shows a schematic top view of a device according to the invention. The waste is carried via the ramps 4 over the folded down side walls 3 to the container 2. In container 2 the waste is manually separated and distributed over the different types of storage and/or processing units 13, 14, 15, 16 and 17.

After collection of the waste is completed the container side walls 3 and the canopies 8 are folded inward and the intermediate tent part 9 is lowered. Thereby formed is a completely closed container in which both the storage and/or processing units and the separated waste are situated. Figure 3 shows how the device is loaded onto a container vehicle 19. The latter contains for this purpose a cable system or a hooking arm (not shown). In order to facilitate roll-on/roll-off of the device the container is provided on one end with transporting rollers 18. The device is transported on the container vehicle to a location where the already separated waste can be further processed or stored.

The present invention provides a device and method for separate collection of for instance market refuse in a responsible manner. Depending on the nature of the provided waste an average 80% of the waste can be processed in an environmentally-friendly manner. In addition the transport costs of disposal of the waste are de-

creased to a significant extent by already reducing the volume of the waste. After the departure of the device on the container vehicle a clean and cleared market place remains. Because collection of the waste can already take place partly during the market or fair, extra retail space is created which, in the previous situation, was occupied by the accumulating waste.

#### 10 Claims

1. Displaceable device for collecting and/or processing waste separated according to type from events such as markets, fairs and the like, comprising a container open on at least one side and provided with means for closing the open side and a number of storage and/or processing units for the individual types of waste.
2. Displaceable device as claimed in claim 1, characterized in that the means for closing the open side are formed by a container side wall which can be folded at least partially downward.
3. Displaceable device as claimed in claim 1 or 2, characterized in that the container is provided on its top with a closure of sheeting foldable out to a market stall-like awning.
4. Displaceable device as claimed in claim 1, 2 or 3, characterized in that the container is closed off on its top by a roof plate hingedly connected to canopy plates forming part of the side walls of the container.
5. Displaceable device as claimed in any of the claims 1, 2, 3 or 4, characterized in that the storage and/or processing units are formed by devices for grinding wood, paper and cardboard or residual waste and by waste bins for potato/vegetable/fruit waste, fish waste or plastic.
6. Displaceable device as claimed in any of the foregoing claims, characterized in that the device is suitable for transport thereof on a container vehicle.
7. Displaceable device as claimed in claim 6, characterized in that the container is provided on at least one end with transporting rollers.
8. Method for collecting and/or processing waste separated according to type from events such as markets, fairs and the like, by arranging a

device as claimed in any of the foregoing claims on or close to a market place, supplying the waste for collection, separating the waste into a number of waste types in or close to the container, storing and/or processing the individual waste types in the storage and/or processing units and transporting the device to a definitive storage and/or processing location by means of a container vehicle.

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9. Method as claimed in claim 8, **characterized in that** the waste is separated by hand into a number of waste types.

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10. Method as claimed in claim 8 or 9, **characterized in that** the waste types are wood, paper and cardboard, plastic, potato/vegetable/fruit waste, fish waste and residual waste.

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11. Method as claimed in any of the claims 8-10, **characterized in that** the processing takes the form of grinding the separated waste.

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12. Method as claimed in any of the claims 8-11, **characterized in that** the stored and/or processed waste is packed in moisture-tight bags.

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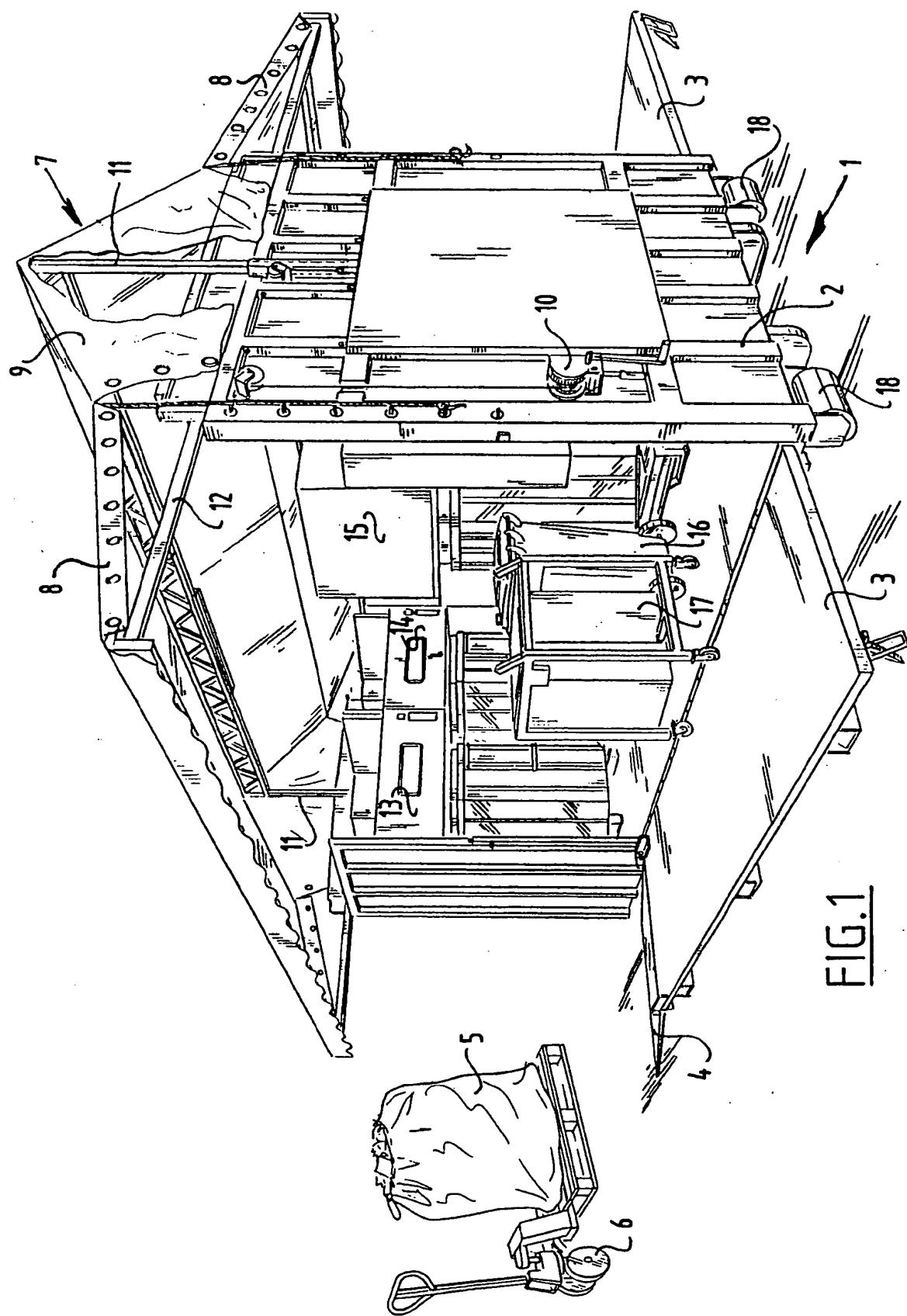


FIG.1

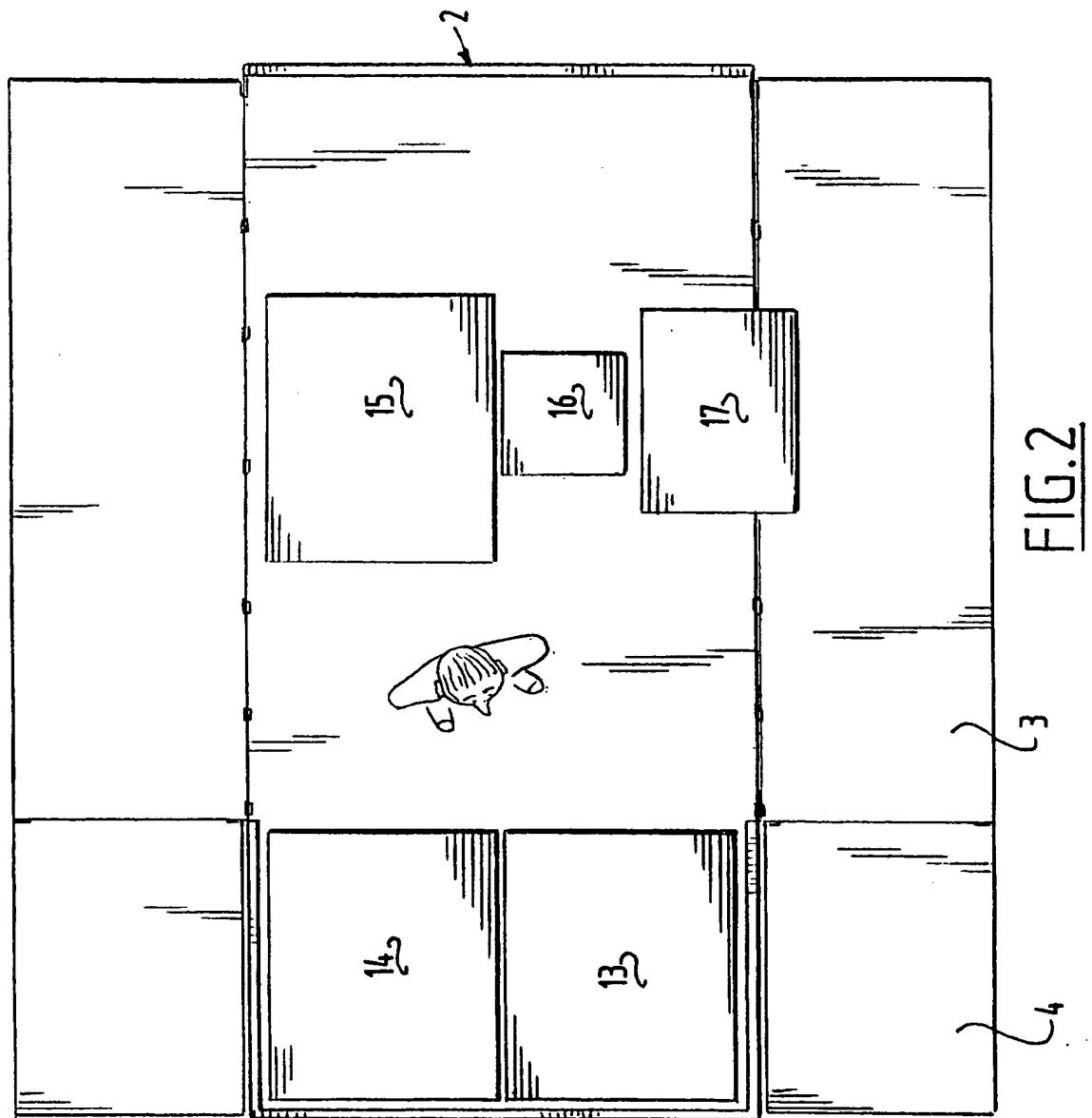
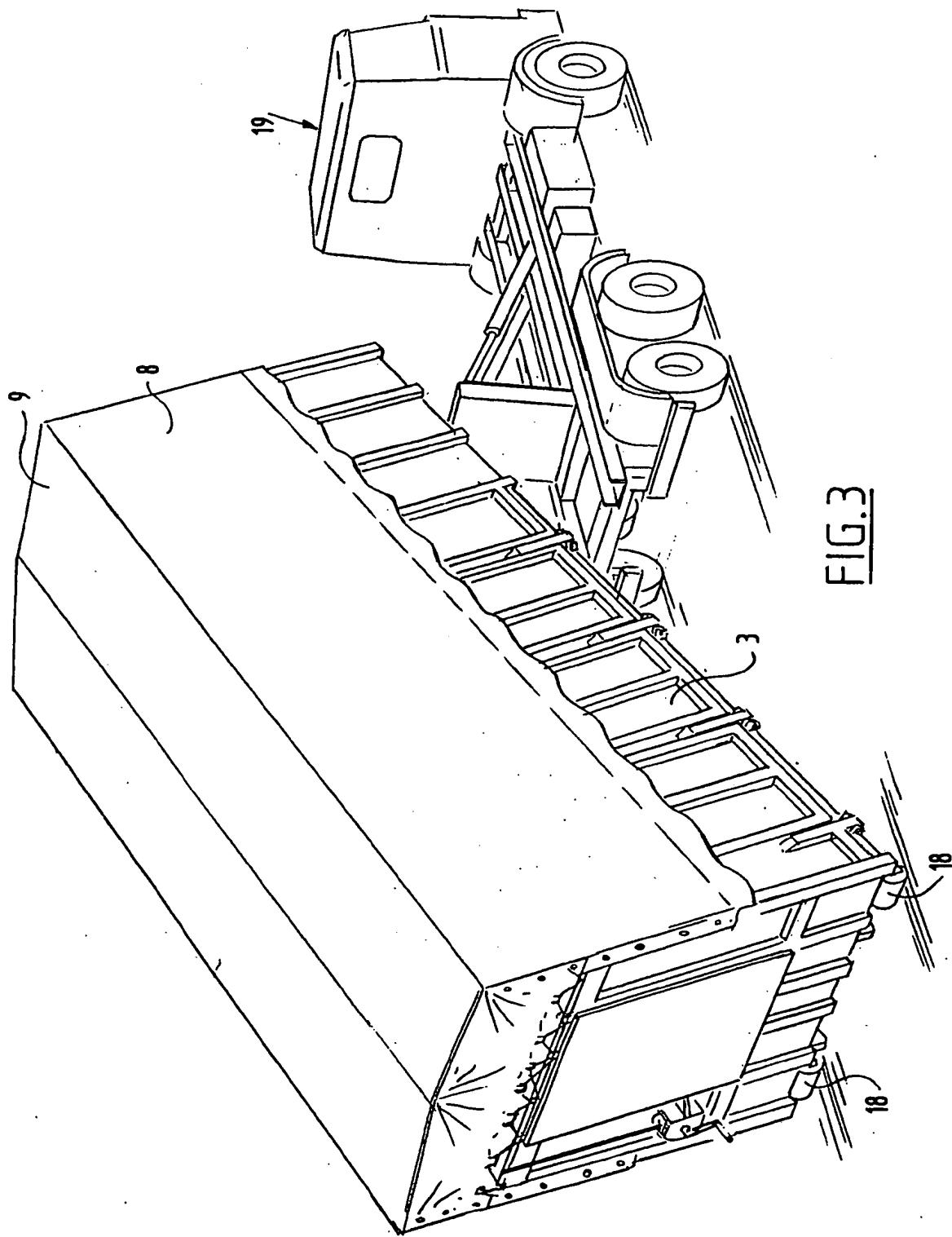


FIG. 2





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## EUROPEAN SEARCH REPORT

Application Number

EP 93 20 0436

| DOCUMENTS CONSIDERED TO BE RELEVANT   |  |   |   |
|---|--|---|---|
| Category  | Citation of document with indication, where appropriate, of relevant passages  | Relevant to claim   | CLASSIFICATION OF THE APPLICATION (Int. Cl.5) |
| X   | US-A-5 058 957 (D. FELL)<br>* column 4, line 7 - line 11 *<br>* column 4, line 62 - column 5, line 32 *<br>* figures 1,2 * | 1,2,5-10<br>3   | B65F1/00                                      |
| A   | -----  |   |   |
|   |  |   | TECHNICAL FIELDS<br>SEARCHED (Int. Cl.5)      |
|   |  |   | B65F  |
| The present search report has been drawn up for all claims  |  |   |   |
| Place of search   | Date of completion of the search   | Examiner  |   |
| THE HAGUE   | 27 MAY 1993  | SMOLDERS R.C.H.   |   |
| CATEGORY OF CITED DOCUMENTS   |  |   |   |
| X : particularly relevant if taken alone<br>Y : particularly relevant if combined with another document of the same category<br>A : technological background<br>O : non-written disclosure<br>P : intermediate document |  | T : theory or principle underlying the invention<br>E : earlier patent document, but published on, or after the filing date<br>D : document cited in the application<br>L : document cited for other reasons<br>.....<br>& : member of the same patent family, corresponding document |   |